Findings of Tennessee K12 Planning Task Force (NTIA Grant)

Contributed by: Jack McFadden <jmcfadden@mail.state.tn.us>
Date: Tue, 17 Sep 1996 14:12:54 -0500

Please note a link you may wish to add to the "Participants' Contributions" section of the US/ND pages. I would suggest listing under this hotlink/header:

Findings of Tennessee K12 Planning Task Force (NTIA grant)

If you want a short narrative description of the link, I would suggest:

In 1995 the State of Tennessee, supported in part by the NTIA Telecommunications and Information Infrastructure Assistance Program (TIIAP), began a planning process for the Tennessee Information Infrastructure (TNII). One of the Task Forces formed as part of this effort was focused on the needs of the K12 community. Their Task Force report, completed in November 1995, describes the needs of K12 and the benefits of networking from an applications perspective; not a technology perspective, and identifies common barriers to implementation as well. While some elements of the Report are now dated, it seems reasonable to conclude that the basic descriptions of K12 applications and benefits are little changed from a year ago. The Final Recommendations report of the 23 member K12 Task Force can be found at this URL:

http://www.state.tn.us/finance/oir/tnii/narative.html

--Jack McFadden

Return to participants' contributions or
Return to Universal Service / Network Democracy or
Return to Information Renaissance home page.

Summaries of Wisconsin Department of Public Instruction; Public Service Commission

Contributed by: Tim Mocarski <tmocars@execpc.com>
Date: Mon, 26 Aug 1996 23:51:18 -0500

Both the Department of Public Instruction and the Public Service Commission of Wisconsin wrote briefs(if you want to call them brief) to submit in relation to the Telecommunications Act.

In essence, the DPI spokesperson stated that Wisconsin schools have a hard time dealing with the ongoing costs incurred with providing access, that public libraries are natural sites to provide the general public with access, and that funding need to be made available to libraries and schools to provide access to the Internet.

The PSC cited much technical language and in essence offered discounts to eligible institutions. In essence the discounts offered were minimal and would be gone after four years under their proposal.

Comment:

I disagree with the DPI assessment that schools can afford the infrastructure of the internet, etc. Building referendums do not have a very successfully track record in our state or in the nation at large, and right now referendums are the major source of funding for such projects.

The PSC proposal in ludicrous. On the one hand eligible institutions should be given discounts, but their proposal limits the discounts. Further, the institutions in question, if they are to continue use of the overall system do need ongoing funding to maintain access.

It boils down to money. How much will it cost and where will the funds come from?

Submitted respectfully,
Tim Mocarski
Burlington High School
Burlington, WI
tmocars@execpc.com

Return to participants' contributions or
Return to Universal Service / Network Democracy or
Return to Information Renaissance home page.

Summary:
Comments of Illinois State Board of Education, et al.

Contributed by: John Moorman <jmoorman@alexia.lis.uiuc.edu>
Date: Thu, 5 Sep 1996 09:43:44 -0500 (CDT)

Summary: Comments: Illinois State Board of Education

A major thrust of the Telecommunications Act of 1996 was to ensure that advanced telecommunications services become available to K-12 classrooms, educational consortia, libraries and rural health care providers.

Eligible services for our learning institutions must include robust, routed, asynchronous and synchronous connections that can carry voice, data, video and images to desktop workstation. These services must be scaleable, flexible, and sustainable. These services should also be technologically diverse. Service quality levels with regards to transmission, installation and maintenance must not differ from the same services offered to business and residential customers. Long-Run Marginal Costs should define the price ceiling that carriers can discount from, in order to assure the services are affordable, while at the same minimizing direct subsidies from the Universal Service Support Fund.

The definition of eligible groups and resale provisions need to encourage on-going partnerships between K-12. libraries, higher education, and education-related, non-profit groups.

Funding mechanisms must be diverse and sustainable. That is funding sources for educational discounts should come from a variety of sources, including the existing Universal Service Fund, as well as general revenues. Among the sources to be considered include a variety of new and existing opportunities. Examples include a levy from every telecommunications carrier based on market-share, using monies from fines levied as part of service quality cases and/or revenues from price cap rate reductions and, on a local level, writing educational access and affordability into franchise arrangements with carriers.

There is a need for telecommunications service in our K-12 educational institutions. Many of our schools have limited, outdated computers, and even fewer have Internet access. A recent survey indicated that less than 1/3 of the K-12 school buildings and school libraries in Illinois and less than 10% of K-12 classrooms have access to the Internet.

Currently, telecommunications costs in many areas of our state are prohibitive for schools and libraries. Universal service means addressing these situations in a manner to permit effective access to telecommunications by all schools and libraries.

We believe discounted, modern, two-way, interactive capabilities to educational institutions with discounts and capabilities over and above those offered to residential customers are critical to the Act's success.

Ultimately, educational institutions will use advanced services only to the extent they can afford to do so. In light of these realities, discounts to educational institutions are only as good as the size of the discount and the "original" non-discounted price of the service. That is, a small discount over a competitively-based price may be more effective than a large discount on a heavily marked-up price. Our recommendation is that the "ceiling" or "original" price of the services be tied to the long-run marginal cost of the service or product. Discounts should come off of this price, not from a more heavily marked-up price evident in monopoly, or lightly-competitive markets.

Another important and related eligibility issue involves the ability of educational institutions to resell services among educational consortium members. We submit that a limited form of resell, or resource sharing, by an educational consortium should be allowed.

Return to participants' contributions or
Return to Universal Service / Network Democracy or
Return to Information Renaissance home page.

The Universal Service "Win-Win" Solution
A Time for Grand Collaborations!

Contributed by: Frank Odasz <franko@bigsky.dillon.mt.us>
Big Sky Telegraph's Web Site

As multiple major governmental and corporate telecommunications infrastructure initiatives move forward there is increasing tension among those who fear the hundreds of locally created community networks will be preempted by the financial muscle of monopolistic interests.

The reality of the situation is that creating autonomously controlled local networks demonstrating the authenticity of widespread purposeful citizen participation can only be achieved through a "Win-Win" ongoing partnership between the builders and the users of our emerging National Information Infrastructure.

The former Congressional Office of Technology Assessment clearly states: "The diversity of applications necessary for a successful NII can only come from the citizens themselves."

Government and corporations can provide the physical infrastructure of wiring and banks of modems as well as financing for community training and technical support centers.

The social info-structure, however, the very heart of any community network, requires genuine citizen participation at many levels. Top-down monopolistic networks without the validation that comes from measurable, purposeful bottom-up participation will become embarrassing 'white elephant' projects.

It is a major cultural shift for citizens to adopt any new communications behavior. Change doesn't come easily. Bringing our existing social structures into the online environment will open many new possibilities for more effective communications, but it will take time for us to become comfortable with both the technology, and conceptualizing these new communications benefits.

The common challenge we're all involved with, from the highest top-down corporate executive, to the lowest blue collar worker, is defining the ongoing process by which we can all find a way to keep up with the best "affordable and appropriate" communications survival tools.

What we're all needing is definition of the process by which we individually get the help we need to continuously learn, experiment with, and evaluate the increasing variety of new communications options.

* Expectations increase with experience.
  You can't effectively tell someone about the advantages of email. They have to experience these advantages firsthand to understand. And the same is true for

each successive level of empowerment;
* Online searching for Information
* Self-directed lifelong learning via Internet
* Online group discussions for public problem solving
* Self-publishing on the World Wide Web
* Entrepreneurship via Internet global marketing
* Electronic Democracy; participation in Government
* Transnational activism; supporting global causes regardless of nation's boundaries

Grand Collaborations

The emerging state of Internet and personal computer technology have the world poised for the emergence of not only widespread community networking, but also for transnational "Grand Collaborations." If AT&T were to join its infrastructure with the International mission of the US Agency for International Development, matched by a training program and research development initiative funded by the Kellogg Foundation, worldwide citizen interest would be instantaneous.

The WWW makes it inevitable that simple entry level self-directed learning programs will allow quasi-literate persons in any culture to simply point and click their way through short learning experiences that will produce near-immediate tangible benefits regarding self-empowerment, familial protection, and community/cultural support such that individuals can quickly learn how to become self-directed lifelong learners. Basic literacy can be taught through web-based instruction on CDROM, preparing learners for Internet navigation.

Universal Service: Infrastructure *<Plus>* Infostructure!

Following on the theme of universal phone service, much deliberation is taking place as to what degree of Internet access constitutes "affordable and appropriate" universal service.

* The medium with the highest potential social benefit is also the most affordable and accessible.

Ironically, the most powerful of all online capabilities is very nearly the cheapest; Internet email. Offline readers are software programs that allow anyone, anywhere with a computer and modem the ability to send or receive messages, written offline or for reading offline, at a cost of under one cent per page.

This has yet to be recognized as the most powerful ubiquitous communications capability in human history. Functional with web-pages as well, the latest offline readers stay connected only long enough to send and receive essential information, allowing the time consuming, and potentially costly, reading and writing to take place economically offline.

Value vs Volume

The value of information most needed by citizens is generally not related to the need for the highest bandwidth. "Human bandwidth" is what is most needed and is not limited to large volumes of data. "Human bandwidth" is the value of the relationship between learner and mentor. The information most people desperately need is generally not [voluminous], but context sensitive; requiring human assistance to determine what specific information is needed by an individual at a given time.

A Logical Place To Begin

Organization of communications is the key, giving citizens the feeling they have a voice in an understandable and motivating context with as little 'training overhead' as possible. Offline reader disks can be sent in the mail with 'plug and play' instructions, even for very narrow, specific applications.

As flat rate Internet becomes locally available in more and more communities, and as the bandwidth increases due to better hardware and software, cabling and wireless, the multimedia capabilities become potentially more ubiquitous.

Thematic programs might engage citizens in responding via automated email upon receiving a disk in the mail, urged to participate by an email message from the governor.

Another program might involve indigenous youth in environmental protection programs based on connecting remote sensing devices via Internet, or performing monitoring projects worldwide.

Another might unite mothers worldwide around issues of childcare, or link women around women's rights.

Another might unite small business persons globally in creating a small business international trade matching system, which are already emerging in many forms. Similarly, gathering for coordinated dissemination what various countries and communities are doing "what's working" with telecottages, televillages, teleservice centers, and telework centers, would be of great interest to many.

Rallying citizens globally around specific causes, with specific training and action goals is becoming far more feasible than ever before.

The importance of the social info-structure, locally as well as globally, is that it is fundamentally relationship-based, and is inherently a mentoring and encouragement process based on personal trust in another.

A great deal of optimization of current low-bandwidth technologies has yet to take place, particularly in support of the great deal of conceptual preparation for emerging high bandwidth capabilities necessary to prepare people to optimize them once they inevitably become available. It can take years to conceptually and culturally adjust to

the full potential of email, alone.

Our current culture, despite the best public education system in the world, is basically a preliterate passive video culture yet to recognize its proactive literacy potential made possible by the sheer power of exchanging ideas via writing. Most of us read very little and write much less, if at all.

Interactive reading and writing is a completely new medium, yet to be recognized for its true inherent social and communications potential. Words are block sculptures of reality, and writing is fundamentally a thinking process. We retain twice as much of what we read compared to what we hear or see. The words of great men and women have endured throughout history. Reading a great book can make images and people live within us in a way more uniquely personal than movies or television, though many of us have never fully experienced this.

We can today automatically search volumes of text for specific phrases, in seconds. The written word has many powerful advantages over video information which are today not well recognized due to our cultural bias toward video and our low literacy levels. Video has many powerful uses, but video communications is not likely to prove more powerful than the written word for a great many purposes.

Citizen Minigrants, Recognition And Showcases

Citizen minigrants programs are needed to reward with recognition those who have used online communications to provide community service; demonstrating how to extend one's limited energies. We need showcases and storytelling on how citizens have been able to find small business contacts via networking and how "real benefits for real people" have been realized!

Many third world cultures will be leapfrogging over the industrial age directly from the agricultural age to the information age. Cultural protection, and entrepreneurship via sharing cultural accomplishments are key issues. Cultural transition in the face of contact with ideas from 'the outside,' pose dramatic risks as well as opportunities.

Ongoing training programs are needed, to teach all citizens how to become self-directed learners, but more importantly to be able to teach others what they've been able to learn. This is what community-building at all levels is fundamentally about.

Return to participants' contributions or
Return to Universal Service / Network Democracy or
Return to Information Renaissance home page.

Summary of the Bootstrap Project In Eight Short Essays

Contributed by: Frank Odasz <franko@bigsky.dillon.mt.us >
Date: Sat, 21 Sep 96 10:16:34 MDT

While this paper contains some of the same material as my "Guide" it also contains some original material relevant to the discussion. I submit it for your review for the archive. These narratives are from a 1994 NTIA proposal which was not funded. The ideas are still what need to happen in my humble opinion.

The following is a readable non-technical summary of the Bootstrap Project separated into eight short essays, ideally to be read in succession. All sections were written by Frank Odasz, Director of Big Sky Telegraph at Western Montana College. <franko@bigsky.dillon.mt.us>

The Bootstrap Coalition; A Grand Collaboration (Summary)

Keys for a Successful National Information Infrastructure.
An Implementation Model with Goals and Strategies.
A Bootstrap Minigrants Model.
A Telepreneurial Cooperative Model.
A Scaleable Inclusivity Model for Additional Partners.
An Evaluative Metrics Model for Collaboration.
Qualifications of Big Sky Telegraph.

The Bootstrap Coalition: A Grand Collaboration

"Doing for ourselves. Together."

Executive Summary
The Bootstrap Coalition,(BC,) will create measurable optimal collaboration models between multiple networking projects, using a decentralized workteam, to include selected experts, in the creation of a Rocky Mountain clearinghouse to engage and support small local rural citizen, school, library, medical, and community telecommunications initiatives.

This "Grand Collaboration" will leverage Big Sky Telegraph's, (BST,) extensive experience with the harsh realities of rural networking to create an ongoing support network for smaller networking initiatives, emphasizing diversity and "have-nots" populations.

The Bootstrap Coalition (BC), to be headquartered at Western Montana College of the University of Montana, requests 2 million from NTIA against 8 million in matching funds, as a category-one demonstration project.

The Need for Collaboration:
Ironically, at a time when federal funding opportunities are becoming increasingly uncertain, the costs of technology are dropping. Locally-funded telecomputing initiatives are becoming increasingly necessary and feasible.

The success of the National Information Infrastructure depends on citizens learning to use telecomputing for purposeful group interaction. Ubiquitous entry-level opportunities are needed to help citizens understand the merits of the successively greater bandwidth connectivity options. Eight-five percent of the American populace has yet to take their first step toward the electronic pathways. Until citizens can begin to assess the potential of the NII firsthand, and assist one another in learning to evaluate and derive these benefits, adoption of interactive technologies will suffer.

* We're moving from personal information access to public problem-solving.
* We need to build the rural capability for public problem- solving; working together online from remote locations.
* We need sponsorship of high profile multi-community initiatives.
* The NII won't realize its potential until ubiquitous access is achieved.
* The NII should provide free/cheapest access to keep innovation levels high.
* Expectations increase with connectivity - at any level!

First-hand awareness of the successive connectivity models is necessary for public acceptance and adoption. Marketing this awareness to the public through a major national project is needed, particularly if demonstrating how "top-down" funding can support widespread "bottom-up" innovation.

Citizens need a vehicle to "share their successes" with those not yet excited about the individual empowerment potential of connectivity. The BC will leverage the dissemination potential of its diverse "multimedia" partners to 'get the stories out there' on an ongoing basis.

The online medium represents the first mass interactive medium in human history, and inherently holds the promise for inexpensive mass teaching, learning, and collaboration. Successful text-based interaction is not dependent on high bandwidth, high costs, or extensive training. Mass collaboration, the most important component of a scaleable NII, is possible today with inexpensive technologies.

Optimal online collaboration needs to be modeled and sustained, between regional, state, and local initiatives and organizations with the benefits of sharing updates from ongoing research, and continuous information collection and organization, clearly demonstrated.

The need exists now to create a citizen engagement coalition to promote widespread citizen awareness of the verifiably "appropriate and affordable" methods of initial networking implementation, with an emphasis on using local funding. The need exists now to provide citizens, schools, and communities nationally with accurate, summative information about their self-directed connectivity options from the lowest-cost entry level, to the most elaborate high bandwidth systems.

Case Study:
Casper, Wyoming is an example of a community organizing its telecommunications infrastructure and needs only minimal funding to implement its school/community networking plan.

Their goals are as follows:

* To train a group of technology leaders, who will host six technology centers. These centers will be located in six geographically scattered schools selected because of their location in low-income portions of the community where citizens most have need of, and are otherwise least likely to have access to, the Information Highway.
* To open these centers in the evenings and on weekends, with the Leader/trainers regularly available to assist citizens as they learn how to link electronically.
* To train teachers in the integration of technology into curriculum and instruction; to experiment and collaborate.
* To train technology supervisors, and coordinators, how to put together a network, build both LANs and WANs, and hook up to the Internet.
* To facilitate community networking by providing for public access and training in the public library, including organizations that will contribute to and benefit from the development of a wide-area local, Internet-connected network.
* To provide a technological business incubator in these centers, where small businesses can come to learn and to link with the world.

Although larger communities such as Casper have organized themselves and begun planning for the coming changes in technology, the resources to achieve these goals are generally lacking in smaller schools and communities. While the largest school districts tend to have a handle on what they need to do in order to connect within and without their districts (hardware, software, connectivity, etc.), the smaller districts are generally lost. They don't have the funds to dedicate to having a full-time technology person to find out what they don't know. They need help.

The Bootstrap Coalition will produce highly replicable models for measurably effective collaboration among diverse projects, schools, communities, organizations, and individuals. This project dovetails with TIIAP objectives by providing a scaleable support model for numerous small networking projects through the creation of "Win-Win" collaborations inherently possible through networking.

Keys to a Successful National Information Infrastructure:
Quote from Congressional Office of Technology Assessment's Oct. 93 report "Making Government Work": "A successful NII can only come from the diversity of applications generated by the citizens themselves." Needed are real people with real needs and ideas.

The teachable dynamics for purposeful online collaboration are only beginning to emerge. Missing has been the "human bandwidth" necessary to provide the fundamental human connections, and encouragement, to assure that widespread sharing, teaching and learning takes place.

Letting All Citizens Know All Their Options

Many viable solutions to citizen's networking needs exist, but are not well known. For example, today's offline readers allow global exchange of 50 pages of text per minute through automated phonecalls at a prime time cost of less than one cent per page using inexpensive high speed modems. Implementation of Eudora–style autodial message exchange disks, (also called offline readers,) has been demanded by users of American Online to help minimize hourly online costs, despite the corporate preference to maximize customer time online. Wireless technologies, such as portable packet radio modems, allow bypass of the high costs for wiring each classroom, making classroom Internet access affordable for many schools. Many such solutions exist.

The citizens themselves have the greatest validity for telling citizens ALL their available connectivity options. Offline readers and wireless connections have not been touted as appropriate and affordable solutions by corporations hoping to make billion–dollar profits selling the government and citizens an expensive hard–wired infrastructure as the only beneficial connectivity option.

The majority of citizens have yet to become actively engaged in networking activities, and in recognizing the benefits of working together online. "Real benefits for real people" has yet to be widely understood.

There Is Yet No Community on Most Community Networks:
Beyond the need for affordable access, basic equipment, and training, true community networking depends on community spirit and the giving of oneself. In a age where 26% of U.S. citizens live alone, the term "resident tenants" better describes most citizens than the term "community members."

The need exists to find new ways of using telecommunications to rebuild and revitalize communities by motivating citizens to renew their commitment to supporting their local communities. Rather than coccooning in front of our TV sets, and blaming the fragmentation of our communities on others, the time has come for each of us to assume our own responsibility to contribute to our communities.

Currently, no community network can boast even a 15% community participation level. Most community networks do not yet have enough public understanding and support to even approach economic sustainability. Community networking needs to be literally marketed to the general public to grow public understanding in why participation on community networks is important to education, health, and governmental information sharing, and most importantly, toward success in the emerging information economy. Public awareness of the benefits is prerequisite to sustainability.

Most community networks, even those with the highest usage figures, such as the Cleveland Freenet, are primarily showcasing volume activity by individual browsers, rather than purposeful group collaborations. Community networking is in its infancy.

Ubiquity and Leveraged Cooperation; Have–Nots and Who–Can't
Decreasing rural revenues for education, health, and other services compel us to leverage existing dollars by maximizing sharing of expertise and resources. All citizens need access, however access alone doesn't assure realization of the benefits, or guarantee

the ability to benefit. "Who can't" is the other side of the "Have-Nots" issue. Not everyone has the skills required to benefit, nor will everyone be able to make this transition successfully. For these reasons, new forms of informational interdependencies are emerging; creating the need for new models for:

* Support networks for underserved populations, led by members of those populations; Native Americans, Hispanics, Seniors, Physically disabled, and others.
* Proactive Neolibrarians anticipating the needs of citizens by providing them with what they didn't know they needed to know.
* Citizen-to-citizen mentorship; sharing the proven benefits of connectivity, particularly where an economic return can be realized for training others. No one is too old or too young to be both teacher and learner, all the time.
* Project-to-project sharing and support between similar projects, since many projects are struggling with unnecessarily creating duplicative training and resource materials.
* Community-to-community and school-to-school mentorship and resource sharing is needed since many communities face nearly identical challenges of marketing public awareness, training, and understanding the need for network sustainability. Industrial-age turfism still inhibits information-age collaborations.
* State-to-state common sense sharing is sadly lacking, as demonstrated at two U.S. Department of Education State Networking conferences, where many solutions to problems were identified that had not been shared even across adjoining state borders.

Needed:
A Decentralized Workteam Model Supporting a Clearinghouse/Training Support Network
A decentralized clearinghouse/training support network will be created by multiple part-time employees from the BC partner projects, partially funded through the Bootstrap Minigrants program. The Coalition will model how decentralized workers can create value in a consistent, organized fashion, showcasing the organizational structure of information age flexible, connected, virtual corporations, and community action groups.

By carefully measuring the individual productivity and collaboration outcomes of this decentralized workteam, the benefits of online cooperation, such as salary savings at the local level, can be formerly validated.

The clearinghouse information will be made available, simultaneously, via gopher, FTP, and WWW; optimally accessible by both low-end and high-end methods.

Needed:
Ongoing "Awareness" Storytelling with Participation Invitations:
Stories of individual successes with telecomputing and Internet by real people are the most effective means of motivating those not yet online to consider taking the initial steps. A monthly "Bootstrap Newsletter" will be created for widespread electronic and print distribution, primarily for those who are still asking "what's in it for me."

A readable "Reader's Digest" format will reach the largest number of potential readers, to include specific opportunities for readers to participate in multiple online collaborative "awareness" activities, including free online lessons about telecomputing and Internet. BST has a long history of telling stories on the Internet, providing free online lessons, and has a considerable following nationally and internationally.

Needed:
A "Grand Collaboration" Model
The collaborative goals of the BC are achievable if these shared goals are clearly designated, and not unrealistically ambitious. Common sense will ultimately prevail. The need exists for grand collaboration models that are simple to understand, to join, and to support.

Despite all the talk, what's missing on the national scene is an elegant model of optimal, practical, collaboration allowing citizens, schools, and communities with multiple existing networking projects to work together by sharing information on what does or doesn't work, on an ongoing basis, transcending traditional borders and cooperative barriers.

An Implementation Model with Goals and Strategies:
Advisory Council
An Advisory Council, doubling as a Minigrants Review Committee, will be formed with the Project Director as Chair. Quarterly meetings via voice conference and online interaction will help determine decision-making regarding specifics of implementation of coalition goals, minigrant awards, and evaluation strategies. Online skills, resource development, and active online participation will be required of all council members, as prerequisite to collaboration. "Everyone contributes."

Criterion for selection of minigrants will be to address special needs, geographical distribution, maximum impact of grant funds, diversity and access issues, and potential for innovation.

Matching Authority with Responsibility = Leadership
Former President Jimmy Carter made a key point regarding what he learned through the failure of multiple U.S. foreign aid efforts: Committee leadership of important projects has repeatedly resulted in the lack of accountability when goals are not met.

Mr. Carter strongly suggests it is better to have an identifiable person take full responsibility for decisions, to be fully accountable, rather than to diffuse accountability through committees. While collaboration is the theme of this project, it needs a real leader, with the authority to match the responsibility of a project of this scale.

Technology Plan
Big Sky Telegraph has long struggled with the economic realities of networking. Big Sky Telegraph is currently limited to a 56kb Internet connection provided by the Montana University System. BST has recently been restricted by the state's decisions to prohibit citizen and business access to Internet through University connections.

The technical plan will be to provide BST an upgrade with a T-1 line and the ability to offer commercial access, on a Sun workstation, with simultaneous WWW/gopher/ftp/and text-only interfaces to the same information, to include 12 28.8 modem dial-up ports for remote project partners using offline readers, (thus modeling optimal collaboration participation at minimal expense, which will be assumed by the citizens themselves.)

Frugality and practicality has been demonstrated by BST. Recognized by the Whitehouse, the Congressional OTA, and with a strong national and international following, BST has modeled technological optimization of perhaps the most leveraged 386 desktop PC in the country. BST has 100 PC's hardwired across the Western Montana College campus, eight dial-in modems, and 16 telnet ports. BST runs on the SCO Unix platform with carefully customized "user-friendly" menu-driven interfaces, a gopher client, offline reader capability, free online lessons, and the full suite of Internet access tools (except for SLIP access to a WWW server, which has been planned.)

The Apple Computer Libraries of Tomorrow project has donated a powerful Macintosh "First Class" community network system to BST and has recently added the offer of a PowerMac WWW server.

The BC partners will work to showcase multiple "high-end" projects to assure we model the" best of the best," while at the same time modeling the "best of the best" at the low end, such as minimal cost, minimal training, maximum communication "offline readers."

Andrew Blau, of the Benton Foundation, has identified the following relationships regarding bandwidth and interactivity:

1. Low bandwidth/Low Interactivity = Databases
2. Low bandwidth/High Interactivity = Electronic mail
3. High Bandwidth/Low Interactivity = WWW Home Pages
4. High Bandwidth/High Interactivity = Two-way Video

There is a very real need to implement low bandwidth email solutions while the infrastructure for high bandwidth solutions are being developed. Citizens need a reason to be so motivated.

An Electronic Barnraising Rendezvous;
A Face-to-Face Kickoff Conference
In early spring 1996, as soon as BST's technical upgrades are complete, the 20 advisory council and workteam members will gather for a 3 day conference to provide the final coordination plan for the project. The heart of the BC will be coordination of the specific work tasks of the decentralized workteam, which holds great potential for innovation, and requires an initial face-to-face planning meeting. Resources, training programs, technical interfaces and questions, will all be thoroughly showcased. Additional attendees will be allowed if they cover their costs for participation.

There has never been a national K12 Rural Telecomputing conference. One exciting option would be to hold a K12 Rural Telecomputing conference to immediately follow the rendezvous, perhaps with additional corporate or foundation assistance.

A Scaleable Citizen Engagement Model
Soon after the Rendezvous, a Call to Action will be widely disseminated inviting citizens to participate in a "Grand Collaboration" demonstration project. While those who already have Internet access will be invited to participate, this specific component of the BC will demonstrate scaleable online interaction, to include those without funding for full Internet connections; currently limited to shoestring budgets. Training and online interaction will be provided remotely, via offline readers.

This citizen engagement program will include self-directed online teleliteracy training for citizens, schools, and communities, to be implemented in a multistate region, creating a community-of-communities, with individual interaction and facilitation of citizen-created online services being the focus.

This first-stage ubiquitous access National Information Infrastructure will be demonstrated, and evaluated, by the citizens themselves.

Bootstrap Electronic Newsletter:
The primary audience for this monthly publication will be those who as yet only glimmer the potential benefits of connectivity. "Nellie's Internet Corner" is a regular feature in the Dillon Tribune, in Dillon, Montana, sharing weekly new discoveries of Internet resources and exciting people. We need more like this.

The "Bootstrap Newsletter" will serve a number of functions for the Bootstrap Coalition by providing ubiquitous entry-level citizen engagement opportunities in interactive discussions, training, and projects supporting community service and entrepreneurial activities.

Specifically, the Bootstrap Electronic Newsletter will:

1. Support basic teleliteracy awareness by regularly telling stories on what has, and has not, worked.
2. Provide a unifying focus of this project by emphasizing the ongoing clearinghouse effort.
3. Encourage and support communication within and among the communities of the partnership.
4. Clarify choices for school/community networks:
5. Support individual online training opportunities.

Emphasis will be on realistic portrayal of the difficulties inherent in gaining public acceptance of entirely new methods of human communications, represented by interactive communications mediums.

One thousand print copies per month will be distributed where they are likely to reach the most citizens. Widespread electronic dissemination will include encouraging organizations to print and distribute copies for their local communities.

Bootstrap Coalition Goals
The Bootstrap online newsletter will support the following goals:

1. Help Market Basic Awareness of Options and Benefits Goal:

Inform citizens as to their present and emerging telecommunications options for creating their own opportunities for self-directed learning and employment in a knowledge-based economy.

Strategy:

- Collect exemplary articles, project descriptions, shareable project deliverables, and archive sites to summatively display via BC gopher/WWW/ftp clearinghouse services.
- Collect and disseminate sources of starter kits for various connectivity levels, and cost thresholds.
- Collect and disseminate public domain Internet and networking videos and clarify copyright restrictions for copyrighted/commercial videos.
- Create and disseminate disk-based online simulation demo disks of exemplary Internet interfaces, archives, and innovative community networking services to allow a maximum number of citizens to appreciate the growing ease of access to networking, and the value of the information available. (BST has developed a simple "Teledemo" program to allow citizens to create their own shareable "simulated live" online demo disks.)

2. Provide Entry-Level First Experiences with the Offer of Follow-Up Training

Goal

Provide ongoing "low-threat" minimal-cost teleliteracy learning opportunities to build skills, awareness, and engage citizens in online group activities.

Strategy

- Conduct a model low-cost collaborative project, to include the BC workteam, using Offline Readers where necessary.
- Post for easy access the best entry-level online experience opportunities including free access specials from vendors, NASA, The Well, Freenets, Government 800 numbers, etc.
- Post sources of free online Internet lessons, guides, software tools, client software, etc.
- Provide a roster of volunteer mentors willing to assist those new to the online medium, partially funded by the Bootstrap Minigrants Program.
- Supporting the creation of "beginner support" forums for special interest groups and "at risk" populations.
- Facilitating the networking among communities and citizens, especially through the public library systems.
- Facilitating the networking within the educational system, i.e. helping schools and students reach out to one another.

3. Clarify Implementation Choices

Goal

Summarize known models and evaluate technical features, maintenance overhead, and social implementation strategies. Identify quality evaluative metrics. Broker expertise.

Strategy:

- Collect the top whitepapers in the field for distribution
- Maintain a current list of projects, schools and communities that have implemented successful models as a resource for validation of what's proven to work, with prearranged consent for posting a contact person..
- Maintain a "Methodology for Creating a School/Community Network" outline.

– Maintain a "Technical Features to Consider" Checklist with the most common decisions necessary in configuring a School/Community network.
– The successive connectivity models, by cost, are:
1. Offline Readers (local or long distance)
2. Dialup Access (ideally local, but often long distance)
3. Dialup SLIP to allow WWW access and other benefits
4. Hard–wired full Internet connections
(* Wireless; higher bandwidth at less cost is an emerging option.)

4. Share Through Multiple Information Channels:

This project will create a virtual community–of–communities demonstrating how multiple state, community, and institutional entities can support one another through ongoing development, integration, and sharing of resource collection/dissemination and training programs via distributed conferencing, listservs, newsgroups, gopher menus, FTP and WWW...and a monthly print newsletter.

4.1. Community Resource Sharing Program

Goal

Create a continually–updated clearinghouse of the highest value resources possible coordinated through all Bootstrap partners gleaning the Internet on an ongoing basis, to include online training opportunities through Big Sky Telegraph and partner systems.

Strategy:

– Demonstrate how information can be shared on an ongoing basis between multiple systems using WWW, FTP, gopher, newsgroups and listservs.
– All BC partners and "decentralized workforce members" will submit short, non–intrusive, monthly updates on what is, and is not working, including newly identified resources, to be incorporated in keeping the clearinghouse updated.
– Emailed files to newsgroup aliases will allow automatic posting of resources in topic specific newsgroups.

4.2. Facilitate Online Dialog

Goal

Listservs and Newsgroups will facilitate ongoing dialog among partner projects demonstrating the Win–Win benefits of collaborative dialog and ongoing information sharing.

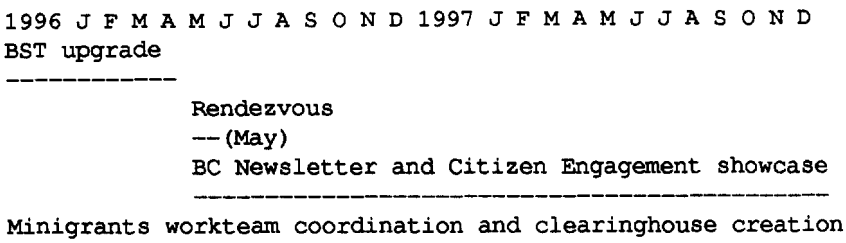
Strategy

A Community–of–Communities component will link community networking efforts with each other to share information such as grant opportunities, grantwriting assistance, training materials, community "programs–of–work" outlines and success stories on citizen innovations that work; via print, online, videotapes, and possibly CDROMS.

5. Citizens' School/Community Minigrant Models

The universal networking project shortfall is typically in the availability of technical expertise, and support and resource development personnel. The model for the successful corporation of the future is one of a decentralized, connected, workteam, gathering the best talents as a flexible corporation, sensitive to rapid change.

Timeline



A Bootstrap Minigrants Model:

The Bootstrap project will use a minigrants model to demonstrate how citizen "experts" can be brought together with citizen "beginners" in a two year demonstration project to showcase the collaborative methodologies that exemplify such virtual corporations.

All major project partners will dedicate staff time to this "labor pool," to work together to build the clearinghouse resources and to keep the information flow among participating projects lively and purposeful.

Multiple citizen minigrants will be given to leverage available dollars to create a fully functional decentralized work team for the Coalition as well as a support community for citizens, schools, and communities. Emphasis will be on scaleability of technical support, salary savings for the local community, and related mentoring issues. These "seed" minigrants will serve as a model to attract additional corporate and foundation funding for additional minigrants, brokered through the exemplary partners and superior collaborative structure provided by the BC Workteam.

Minigrants can greatly leverage funding by showing rural citizens what they can do for themselves, while building pride and self-sufficiency. "Electronic barnraisings" for school/community networks are proliferating, creating a need for a support center for these budding efforts.

Minigrant Models Are Badly Needed
Annenberg/CPB has a 50 million dollar "Rural Challenge" funding effort planned to support rural schools. The US WEST Foundation is considering community networking funding initiatives. The need for minigrants funding models exists for these, and other initiatives to emulate. Each year, over 95 billion dollars is given by private individuals, compared to 6-8 billion by corporate foundations and another 6-8 billion by private foundations. How to best disseminate funds for successful school and community networking continues to be a source of widespread confusion.

The Congressional Office of Technology Assessment's "Making Govt. Work" report strongly recommends government set-asides for citizen minigrants to fuel the levels of innovation needed for a successful NII.

Minigrant Benefits to Funders:

* More citizens participating per funding dollar
* Electronic monitoring of online activity is convenient and ongoing
* Electronic submission of new project ideas with ongoing convenience
* Grantmakers have opportunity to begin to understand how to leverage the benefits of the online medium.
* Electronic RFP's,(Request for Proposals,) submissions and administration allow greater choice of fundable projects with greater efficiency.

Bootstrap Minigrants Program:

- To create citizen–to–citizen training support models.
- Minigrants to Native Americans, Hispanics, physically challenged, and other disenfranchised groups so they can work to assure their peers are represented online. Each group will work to identify the unique methods required to assure their groups are not left behind, as have–nots.
- Community service minigrants to students for training citizens and showcasing online services and resources to support community teleliteracy and economic development.
- A "Learn–to–Earn" program for poverty–level parents to provide community service hours for credits to pay off their refurbished used computers with modem. (Following the LINCT model.)
- To provide loaner laptops to those who have time and resources to contribute, but are without equipment.
- To demonstrate how parents and children can experience the benefits of being online from home, with the option to pay off loaner laptops by training citizens and providing online services.
- To support relationship and idea brokering for funding foundations.

Student Internships
Many shining examples exist where students have successfully wired entire schools, manned technical hotlines, trained citizens, and maintained complex online systems. Students typically have more time available than adults, and learn technology at a much faster rate. Perhaps we need a summer computer camp for adults, with students as counselors.

A Telepreneurial Cooperative Model
Telepreneurial Training Cooperative:

The greatest need for citizens is how to earn a living to replace rapidly disappearing traditional vocations. Proper national promotion of the BC represents the inherent potential to kickstart the proliferation of online jobs and small business "win–win" relationships, globally, without having to wait for the natural evolution of such opportunities to unfold.

An online teaching model similar to Mind Extension University is needed. Minigrants will be used to sponsor demonstration online telepreneurial enterprises, with sponsorship of additional course creation projects.

A model is needed for a "Telepreneurship Cooperative" to provide training, certification, and joint marketing of skills and entrepreneurial online services for citizens. Model online interactive instructional methods will be demonstrated for both K–12 and Higher Education Telepreneurial replication.

The extent that the Bootstrap Coalition can expand this telepreneurial training component, and the following related goals, will depend on additional partners and funding. This portion of the overall plan is vitally necessary and appropriate partners will be aggressively sought. All partners will work to articulate the following potentialities and to find support for the following telepreneurial pilot efforts.

K12 Telepreneurship and K–100 Lifelong Learning:
Lifelong learning has become an employability survival necessity. The distinctions between what should be taught in K12 schools, and in the current workplace, are blurring, as more powerful connectivity and information management tools are proliferating at every more affordable prices, and with easier to use interfaces. As mentioned, K12 students have an attitudinal mindset that allows them to typically outlearn adults, if given hands–on access to the appropriate technologies.

In short, what's good for K12 is good for training the current workforce in most instances; basic literacy, teleliteracy, and infoliteracy.

The Bootstrap Coalition will continue BST's commitment to keeping the importance of appropriate K12 educational reform at the forefront of the innovations summarized in this proposal.

The need exists to create initial free entry–level training materials, and create a "for profit" series of instructional courses centering on telepreneurial skills and models for success in the emerging knowledge economy. Citizens need an affordable means of learning how to create online courses and services, and to potentially market them with the help of an aggregation hub such as the BC.

Getting Down to Business
A telepreneur training, support, and co–marketing online cooperative will help deliver citizen–created, non–credit lessons, and service delivery models exploring how citizens can learn–to–earn, to stimulate even greater interest among citizens in creating their own ventures. The goal will be to create self–fulfilling knowledge–economy models that respond to existing needs.

Telepreneurial Cooperative's Benefits and Goals:

- Identify what trainable skills best result in employment.
- Give "good idea" businesses free publicity to assure their success and replication/competition.
- Leverage aggregate services through "online mall" mass marketing.
- Allow citizen's to hang an entrepreneurial shingle from a "marketplace" system that already has a critical mass of interest.
- Publish awareness infomercials to expand citizen's visions of what's possible.

- Just-in-Time subcontracting; Online "temporary help" subcontracting.
- "Non-Academic Certification" by competency level; graphics, desktop publishing, writing, organizing, info-searching, condensing, multimedia authoring. Progressive levels of certification to enhance employability.
- Successes sharing; Ongoing showcase of innovations that work, and failures to learn from.
- Share current "inside track tips" on new technologies, efficiency tricks, telepreneurial trend profiles, facilitate contacts.
- Identify appropriate telepreneurial instruction for K-12 and Higher Education
- Facilitate education/business telecollaborative opportunities.
- Provide working models of successful decentralized workteam businesses.

A Scaleable Inclusivity Model for Additional Partners:
Inclusivity Provision:
The BC partners; projects, organizations, and individuals, will form the core workteam for this coalition demonstration project. BC will model an inclusivity plan for welcoming additional partners wishing to participate. New partners, welcome to join at any time, will be asked to adhere to the following activity and reporting requirements, identical for all "founding" partners:

1. All partner projects, regardless of funding, will post their project description with technical details, their available "public" support staff, their current and planned shareable resources and training materials, their Bootstrap commitments (program of work) and evaluative metrics/measures of delivered assistance.
2. Each project's designated Bootstrap staff must already have, or be willing to quickly acquire, the technical telecommunications skills to share files and email via Internet, and assist in measuring their collaboration with other project personnel on a regular basis.
3. Each project will have an electronic conference moderated by their support person to be used to leave a "paper trail" of their activities, new postings, and updates, related to their project goals and their participation with the BC. Multiple file storage and hyperlink options will be available.
4. Partner staff will assist the internal and external evaluation process in measuring their collaboration and productivity.

Who Will Benefit:
Hundreds of individuals, schools, and communities will benefit directly from the support services provided through this project. Thousands will benefit indirectly. Serving as a national model for collaboration, the expected extended benefits should be truly overwhelming. Inclusivity provisions have been carefully designed to provide for as maximal impact by this project as is possible.

Sustainability
Big Sky Telegraph has long struggled with sustainability as its worked to elevate the teleliteracy awareness of citizens, teachers, and our local, state, and national leadership. This project will greatly enhance BST's ability to achieve a sustainable level of subscribers and corporate sponsors.

The scale of this project will attract corporate and foundation sponsorship. BST has a history of survival and every effort will be made to sustain the Coalition. Western Montana College, the Montana University System, and the state of Montana, has a vested interest in the survival of BST and the Coalition.

An Evaluative Metrics Model for Collaboration:
Internal Evaluation
Each partner will be required to report on the resources/interaction sharing that actually took place with other partner projects. The opportunity exists to use top national research talent to devise unique measures directly applicable toward measuring the benefits and actual activities occurring on community networks.

Evaluative Metrics
Measures of interaction, delivered resources, training and technical support will be conducted internally in cooperation with an external evaluator. The opportunity exists to devise unique, replicable measures on the effectiveness of collaboration.

The BC will keep records of:

- the number of partner organizations and individuals

Interaction

- The number of persons assisted via voicephone
- The number of Bootstrap-related conferences
- The number of email queries from citizens and support provided: archive all public correspondence.
- The number of public messages exchanged, private messages will not be counted.
- The number of WWW hits on posted resources

Resource Sharing

- The number of files posted on BST.
- The number of BST files areas, ftp directories, WWW pages, gopher menus/options, and the number of hyperlinks.
- The number of files ported to other systems.

External Evaluation
The External Evaluator will work to devise original evaluative metrics and will include subjective reports from project staff, and citizens accessing Bootstrap conferences and resources. Multiple measures of internal personnel interaction and external citizen support interaction will be provided in graphical form, as will the resource sharing component. How to evaluate private interaction and sharing, which is expected to be the larger portion, without compromising privacy, will be the key challenge.

Qualifications of Big Sky Telegraph:
Big Sky Telegraph is uniquely qualified to lead this "Grand Collaboration National Showcase Project." Online since January 1, 1988, BST has built a reputation of being consistently innovative in creating successful large scale collaborative projects. BST was mentioned in the September 92 White House NII Agenda report as a model community/regional network, and appeared on the cover of the 1993 OTA report;

"Making Government Work; Electronic Delivery of Federal Services." BST has been featured in dozens of articles, and is listed as a free global Internet "safehouse for learning" in dozens of books, internationally.

BST has served as a clearinghouse for K12, community networking, and "Beginning Internet" information accessible by anyone, anywhere, anytime via even the most humble of technologies. BST has continually offered free online lessons since it first began in 1988. BST's lessons and resources have benefited tens of thousands. BST has 5,000 registered users and welcomes over 1,000 Internet visitors each month.

BST's home, Western Montana College of the University of Montana, has over one hundred years of leadership in training rural teachers and is also the home of the nationally renowned Montana Rural Education Center, (which has recently endorsed as one of five national rural education research centers by the National Rural Education Association.) Western Montana College provides a colorful, authentically rural, institutional "lighthouse" base for this project.

BST is currently conducting the following major national collaborative programs:
1. Funded by the U.S. Dept. of Education is a "K12 Electronic Model Congress" project including 80 High School teachers from 19 states, supported by 23 congressional offices. This project dovetails with a Salmon Fisheries Environmental project including 60 teachers from 19 states, Finland, and British Columbia. These two projects will be collaborating around environmental debate, electronic information gathering, and advising our elected leaders on policy issues, electronically....the exact same skills all citizens will need to acquire if they are to participate in an electronic democracy. One hundred forty teachers are now taking BST's online course, mentored by a single talented teacher in Oklahoma.

This project is the result of BST's longstanding partnership with the Columbia Education Center, of Portland, OR, which has worked with over 450 rural and small town teachers and has the distinction of having received more Eisenhower grants than anyone else. (See Appendix.)

2. Funded by the Annenberg/CPB Math and Science project, and the US WEST Foundation, BST's "Reach for the Sky" rural telecomputing project has demonstrated how providing rural teachers with laptops, and online training, can produce teleliterate teachers able to integrate many components of the Internet into their curriculums despite being limited to $6/week phone stipends. The 20 first year trainees will mentor an additional 80 teachers across a five state region demonstrating a scaleable "teacher mentoring" program suitable even for the most remote rural teachers. The economics and ergonomics of this project are of national significance, as are the methods used to teach telecollaboration. The original 20 teachers stand ready to train others, and can speak to the effectiveness of this project. (See Appendix.)

3. BST advises many projects nationally. Director Frank Odasz is halftime Senior Advisor on Community Networking for the Morino Institute of Reston, Virginia, on behalf of which he has been consulting for Nebraska's "Community Networking Institute," which will host "electronic barnraising" for 15 rural community economic

development networks, Fall '95. (See Appendix.)

4. BST has consistently championed the "Have-nots" issues, adhering to "Value Pull – Not Tech Push," while recognizing that high bandwidth may well be the ultimate goal for rural citizens, as it may mean the key difference in achieving economic competitiveness.

5. In 1989, BST conducted a US WEST supported expansion project where rural teachers conducted 300 rural community "live" presentations on the benefits of telecomputing. Six rural school/community networks were provided implementation assistance, and all have since expanded and continued to grow. 300 rural schools received modems, limited use of an 800 number, and training to "get online."

Conclusion:
BST has extensive experience helping individuals with good ideas implement them online. BST is uniquely experienced in online management of multiple small networking projects and in assisting individuals in making their innovations realities.

Return to participants' contributions or
Return to Universal Service / Network Democracy or
Return to Information Renaissance home page.